

REMARKS

Claims 31-38 and 40-45 are pending in this application, with claims 1-30 and 39 having previously been canceled, without prejudice or disclaimer and claim 38 having been withdrawn by the Patent Office from examination. By the present Amendment, claim 31 has been amended to clarify the claimed subject matter, and claims 40, 42 and 43 (which depended from canceled claim 39) have been amended to depend from claim 31. Claims 31-38 and 40-45 remain pending upon entry of this Amendment, with claim 31 being the sole pending claim in independent form.

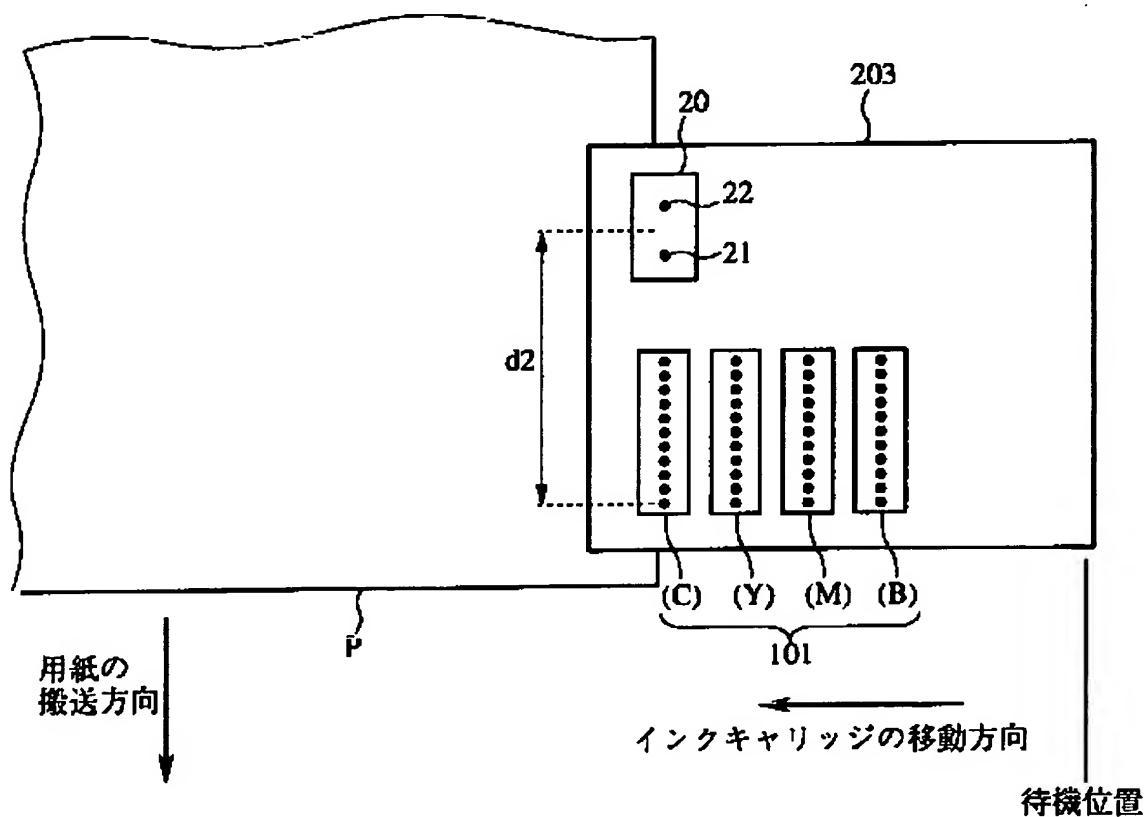
Claims 31-37, 40-43 and 45 were rejected under 35 U.S.C. § 102(a) and § 102(b) as purportedly anticipated by Sugimura (JP 2003-53953). Claim 44 was rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over Sugimura in view of Maki et al. (US 2002/0126193 A1).

Applicant respectfully submits that the present application is allowable over the cited art, for at least the reason that the cited art does not disclose or suggest the aspects of the present application that the state detector is provided on an upstream side of said carriage in a feed direction of the recording medium, and the *printing operation is started in a subsequent main scanning* after said recording medium is conveyed and said state detector *detects an edge of the recording medium while scanning said carriage in the main-scanning direction in a current main-scanning*, and said state detector detects the edge of the recording medium in the main-scanning direction for each main-scanning of said carriage so as to determine a position of the edge of the recording medium for the printing operation of a subsequent line. An effect of such aspects of the present application is that a printing operation can be performed while monitoring a width of a recording medium at all lines, even in a bidirectional printing, by monitoring a width of the recording medium for a line subsequent to a line to be, or being, printed.

Sugimura, as understood by applicant, proposes an inkjet printer 10 including a carriage

203 bearing inkjet heads 101 and configured to move back and forth in a direction orthogonal to a paper feed direction, and a sensor 20 provided on the carriage 203 to detect a leading edge of recording paper P, as shown in figure 8 (reproduced below, with annotation). When the recording paper P is detected by the sensor 20, the recording paper P is moved rearward once and printing is performed by the ink head 101 with consideration of a time lag due to a distance d2 between the center of the sensor 20 and the edge of the inkjet heads 101.

【図8】



Sugiyama, [0026]-[0027], proposes that the sensor should be provided at a position on the carriage to detect a paper edge at main-scanning of an initial printing operation, and the

detection of paper edge triggers start of printing operation at the current line, such that a printing operation and a paper width detecting operation are performed simultaneously.

However, Sugimura does not disclose or suggest detecting an edge of a recording medium during a current main-scanning for a printing operation at the current line, for control of a subsequent main-scanning for a printing operation at a subsequent line (that is, next line after the line being printed by the inkjet head 101).

While Fig. 8 of Sugimura shows the sensor 20 being located at a position different from a position of the ink head 101 in the paper conveyance direction, detection of the paper edge by the sensor 20 is for control of the printing of the current line. As a consequence, if the paper is in an irregular size, especially, if the paper width at the position of the ink head 101 is smaller than a paper width at the position of the sensor 20, ink is discharged from the ink head 101 at a paper edge detected by the sensor 20, which results in the ink being discharged out of the paper. Sugimura fails to appreciate such problem.

On the other hand, according to the above-mentioned aspects of the present application, conveyance of the recording medium and the main-scanning of printing of a subsequent line are performed after the edge detection in the main-scanning of the current line is performed. Thus, the paper edge at the ink head can be accurately grasped, which prevents ink from being discharged off of the paper.

Maki, like Sugimura, does NOT disclose or suggest the aspects of the present application that the state detector is provided on an upstream side of said carriage in a feed direction of the recording medium, and the printing operation is started in a subsequent main scanning after said recording medium is conveyed and said state detector detects an edge of the recording medium while scanning said carriage in the main-scanning direction in a current main-scanning, and said

state detector detects the edge of the recording medium in the main-scanning direction for each main-scanning of said carriage so as to determine a position of the edge of the recording medium for the printing operation of a subsequent line.

Applicant submits that the cited art, even when considered along with common sense and common knowledge to one skilled in the art, does *NOT* render unpatentable the above-mentioned aspects of the present application.

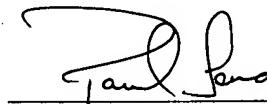
Accordingly, applicant respectfully submits that independent claim 31 and the claims depending therefrom are allowable over the cited art.

In view of the remarks hereinabove, applicant submits that the application is allowable. Accordingly, applicant earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such petition. The Patent Office is hereby authorized to charge any required fees, and to credit any overpayment, to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,


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